

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/18003

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/11

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, SEQUENCE SEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GUO FUKUN ET AL: "Antisense IRAK-1 oligonucleotide blocks activation of NF-kappaB and AP-1 induced by IL-18" IMMUNOPHARMACOLOGY, vol. 49, no. 3, September 2000 (2000-09), pages 241-246, XP002257993 ISSN: 0162-3109 cited in the application page 242-244; figure 1 -----	1-20

☐ Further documents are listed in the continuation of box "C".

☐ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

16 October 2003

Date of mailing of the international search report

03/11/2003

Name and mailing address of the ISA

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 15-20 are directed to a method of treatment of the animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-4, 10-20

A compound 8-80 nucleobases in length targeted to a nucleic acid molecule encoding IL-1 receptor-associated kinase-1, wherein said compound specifically hybridizes with said nucleic acid molecule encoding IL-1 receptor-associated kinase-1 and inhibits the expression of IL-1 receptor-associated kinase-1 (claim 1), wherein the compound is an antisense oligonucleotide which comprises at least one modified internucleoside linkage which is a phosphorothioate linkage, a composition comprising the compound of claim 1, a method for inhibiting the expression of IL-1 receptor-associated kinase-1 with the compound of claim 1, and a method of treating an animal with the compound of claim 1.

2. Claims: 1-2, 5-6

A compound 8-80 nucleobases in length targeted to a nucleic acid molecule encoding IL-1 receptor-associated kinase-1, wherein said compound specifically hybridizes with said nucleic acid molecule encoding IL-1 receptor-associated kinase-1 and inhibits the expression of IL-1 receptor-associated kinase-1 (claim 1), wherein the compound is an antisense oligonucleotide which comprises at least one modified sugar moiety.

3. Claims: 1-2, 7-8

A compound 8-80 nucleobases in length targeted to a nucleic acid molecule encoding IL-1 receptor-associated kinase-1, wherein said compound specifically hybridizes with said nucleic acid molecule encoding IL-1 receptor-associated kinase-1 and inhibits the expression of IL-1 receptor-associated kinase-1 (claim 1), wherein the compound is an antisense oligonucleotide which comprises at least one modified nucleobase.

The attention of the applicant is directed to the fact that no search has been carried out for the multiplicity of different oligonucleotides listed in Table 1 of the description. Said structurally different sequences do not represent a common single inventive concept.